

Task: Compute Data for a Grid-Registration Mission Using a Mortar Ballistic Computer

Number: 071-082-0010

Effective Date: 2002-May-06

**Enlisted MOS:
11C Skill Level 2**

**STP:
CMF 11 (INFANTRY)
STP 7-11C14-SM-TG**

Conditions: As a computer in a fire-direction center (FDC), given an initialized mortar ballistic computer (MBC); a coordinated registration point; a blank DA Form 2399 (Computer's Record); a blank DA Form 2188-R (Data Sheet); and a pencil.

Standards: Registered the section, adjusted the sheaf, and determined the firing corrections to within 1 mil for deflection and 1 mil for elevation.

Performance Steps

1. Enter the call for fire on the computer's record (Figure 1), using the GRID menu and assigning A2 as the adjusting piece in the WPN/AMMO menu.

COMPUTER'S RECORD					
For use of this form, see FM 27-91; the reporting agency is TRADOC					
ORGANIZATION BCO 1/29 INF	DATE	TIME	OBSERVER ID P35	TARGET NUMBER RP00	
<input type="checkbox"/> ADJUST FIRE <input type="checkbox"/> FIRE FOR EFFECT <input type="checkbox"/> IMMEDIATE SUPPRESSION	SHIFT FROM	POLAR			
GRID 0160 7430	DIR DIRECTION	DIR DIRECTION			
DIR DIRECTION 1400	ALTITUDE	ALTITUDE			
ALTITUDE 330	<input type="checkbox"/> UP <input type="checkbox"/> DOWN	<input type="checkbox"/> UP <input type="checkbox"/> DOWN			
TARGET DESCRIPTION REGISTRATION POINT	METHOD OF CONTROL				
METHOD OF ENGAGEMENT	MESSAGE TO OBSERVER ANGLE T: 1000				
FOC ORDEF	INITIAL CHART DATA		INITIAL FIRE COMMAND	ROUNDS EXPENDED	
MORTAR TO FFE SEC	DEFLECTION		MORTAR TO FOLLOW SEC	①	
MORTAR TO ALL #2	DEFLECTION CORRECTION <input type="checkbox"/> L <input type="checkbox"/> R		SHELL AND FUZE HEQ		
METHOD OF REL IRD	RANGE		MORTAR TO FIRE #2		
BASE FOR CORRECTION	WALT CORRECTION <input type="checkbox"/> - <input type="checkbox"/>		METHOD OF FIRE IRD		
SHEAF CORRECTION	RANGE CORRECTION <input type="checkbox"/> + <input type="checkbox"/>		DEFLECTION 2407		
SHELL AND FUZE HEQ	CHARGE/RANGE 3159		CHARGE 3		
METHOD OF FIRE	AZIMUTH 1675		TIME SETTING		
RANGE LATERAL (STEAD)	ANGLE T 1000		ELEVATION 1085		
ZONE					
TIME OF OPENING FIRE W/R					

071-082-0010_01

2. The forward observer sends the correction, "Left 200, add 100." He continues to send corrections (Figure 2) until the round is within 25 meters of the registration point. At this time, he has completed the registration. Record these corrections on the computer's record.

OBSERVER CORRECTION			CHART DATA		SUBSEQUENT COMMANDS							
DEV	RANGE	TIME (HEIGHT)	DEFL	CHARGE (RANGE)	MORTAR FIRE	METHOD FIRE	DEFL	RANGE	CHARGE	TIME (SETTING)	ELEV	
L200	+100			3209			2477				1071	②
R100	-50			3181			2440				1079	③
	+25	R/C		3200	PREPARE TO ADJUST SHEAF							

071-082-0010_02

3. Using the MBC, enter the REG menu when the FO gives the command, R/C (registration complete), and after the lateral or range correction (if any) has been computed. The REG menu determines the correction factors for the RP. Automatically process the RP as a surveyed grid mission, pressing the REG switch.

- If the FO's identification was entered with the call for fire, the MBC displays REG and the FO ID.
- The MBC displays the mission and target number.
- The MBC displays the FO DIR to the target.
- Press the SEQ switch. The MBC displays the RP grid. Notice that the grid displayed is the

- initial grid--not the grid to the adjusted point.
- e. Press the SEQ switch. The MBC displays the altitude to the RP.
- f. Press the SEQ switch. The MBC displays the weapon caliber and the weapon number of the adjusted piece.
- g. Press the SEQ switch. The MBC displays the charge.
- h. Press the SEQ switch.
- i. Press the COMPUTE switch to determine the firing corrections. The MBC displays the assigned RP number as RP 00.

NOTE: Each time you press the REG MENU switch, the MBC assigns a new RP number; therefore, you must press the REG MENU switch only once during each registration mission. You can review the REG data by using the initialization keys and pressing the REG DATA switch, entering the RP number, and sequencing forward. You do not update REG. Sequence forward until you see the RCF and DEFK, then sequence until READY is displayed.

- j. Press the SEQ switch. The MBC displays the type of MET used and the RCF, + 15.
- k. Press the SEQ switch. The MBC displays the type of MET used and the deflection correction, L 38.

4. Press the SEQ switch. The MBC displays READY. The MBC has determined the firing corrections but will not apply them to any subsequent data during this mission. However, the correction factors are automatically applied to all following missions within the transfer limits of the RP.

5. Initiate the adjustment of the sheaf. Tell the FO, "Prepare to adjust the sheaf." The FO responds, "Section right" (Figure 3). Record this data on the computer's record.

S/R					SEC	REF	2444				
#1 L20					#1	DNF	2450				
#3 RAD					#3	DNF	2492				
#4 ADJ EQJA											
					SEC	REFER	2444	RA	A/P		
					RCF	+15		DEFK	L38		

DA FORM 2390, DEC 91
REPLACES DA FORM 2390, OCT 71 WHICH IS OBSOLETE

071-082-0010_03

6. When you give the firing data to the mortars, the section will fire either a section left or right, but No. 2 mortar will not fire. Use the TFC menu to change CON:AF to CON:FFE. To determine the firing data, press COMPUTE. Changing CON:AF to CON:FFE and pressing COMPUTE in paragraph 7 is mandatory; you must do it before adjusting individual mortars. This gives the mortars the same deflection as the No. 2 mortar. The FO orders a section right fired without the No. 2 mortar. He calls back, "Number one mortar left twenty; number three mortar right forty; number four mortar adjusted. End of mission, sheaf adjusted."

NOTE: Ignore range corrections under 50 meters. Refire corrections of 50 meters or more. Corrections to be refired should always be transmitted first by the FO.

- a. Use the adjust menu and sequence to ADJ: AUF; change AUF to SHEAF.
- b. Sequence to WPN. Enter A1 and a correction of L 20.
- c. Compute the correction.
- d. Using the ADJ menu, sequence to CONT NXT and select NXT. If any adjustment requires refiring, compute that correction and that weapon refires. The FO again gives a spotting correction. Once all adjustments are made for a specific mortar, select NXT and enter the next weapon to be adjusted.
- e. Enter A3 and a correction of R 40.
- f. Compute the correction.
- g. Using the FIRE DATA switch, sequence through the data and record the new data for the No. 1 and No. 3 mortars. Once the sheaf has been adjusted, the section must REFER and

REALIGN the aiming post on No. 2 mortar's DEF 2444.

7. End the mission in the MBC using the EOM menu. Save the mission as KNPT 03, recording it on the data sheet.

8. Use the REG DATA menu to store information about the RP and to update the RP. Update the RP when a MET message is received or when reregistration is conducted.

Evaluation Preparation: SETUP: At the test site, provide all equipment, materials, and information given in the task condition statement.

BRIEF SOLDIER: Tell the soldier to prepare the mortar ballistic computer (MBC) with the initial data given.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Correctly entered all data in the MBC without error.	_____	_____
2. Determined and recorded deflection, charge, and elevation for each round fired.	_____	_____
3. Determined and recorded range and azimuth to the registration point.	_____	_____
4. Determined and recorded the angle "T." Told the FO if the angle "T" was greater than 500 mils.	_____	_____
5. Determined and recorded the deflection and range correction factors.	_____	_____
6. Ensured section referred and realigned the aiming post on No. 2 mortar's deflection.	_____	_____

Evaluation Guidance: Score the soldier GO if he passes all performance measures. Score him NO-GO if he fails any

performance measure. If he scores NO-GO, show him what he did wrong and how to do it correctly.

References:

Number	Required	Title
FM 3-22.91	N	Mortar Gunnery

Certifications Required: None.

Supporting Individual Tasks: None.

Supported Drills: None.